REMARKS

The Office Action of May 9, 2003 presents the examination of claims 1-31. Claims 1-5, 8-11, 13-16, 18-20, 22-29 and 32-38 are now pending in this application. Claims 6, 7, 12, 17, 21, 30 and 31 are canceled, without prejudice to or disclaimer of the subject matter thereof. Claims 32-38 are new.

Description of amendments

Amendments are made to the previously pending claims to incorporate limitations of dependent claims into independent claims 1 and 16. Claims 6, 7, 17, 21, 30 and 31 are canceled as thus becoming duplicative. Claim 8 is amended to provide dependency from a pending claim. Claim 18 is amended to use terms having antecedent basis.

Support for new claims

New claims 32-36 describe the invention partly in "product-by-process" terms. Support for the process limitations recited in these claims is provided in the specification at, e.g., pp. 3-4.

New claim 37 recites that the nucleic acid component of the composition includes a nucleotide sequence that can form a guanine quartet. This structural feature is disclosed at p. 20,

line 25 of the specification. The term "guanine quartet" is further explained in the Tasset reference of record via an information disclosure statement and listed as reference 29 at pages 5 (in reference to the nucleotide sequence of SEQ ID NO. 2) and 28 of the specification. The Tasset reference is incorporated by reference in the instant specification at page 24 of the specification.

New claim 38 is supported by the specification by the description of the oligonucleotide ODN1 (SEQ ID NO. 1) at page 5, line 19, taken with the description of the process for producing an aptamer at page 3, lines 23-24. The choice of the particular portions of SEQ ID NO. 1 as "arms" and as "randomized sequence" is disclosed in Bock et al., cited as reference number 5 in the specification at page 5, line 19 (in reference to SEQ ID NO. 1) and page 24. The Bock reference is incorporated by reference in the instant specification at page 24 of the specification.

Rejection for "new matter"

Claims 16, 18-27 and 29 and 31 stand rejected under 35 U.S.C. § 112, first paragraph for alleged failure of the specification to describe a limitation recited in the claims. The Examiner describes the rejection as one for incorporation of

new matter into the application. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The amendments of the claims herein have rendered this rejection moot. Notwithstanding that, Applicants note that the Examiner has mistakenly read the claims as reciting a half-life of the protein component in serum of "greater than 1.5 hours." This term in fact reads "greater than 1.0 hours" after amendment on February 25, 2003. Furthermore, even the term "1.5 hours" is supported by the specification at page 23, line 24.

Rejection for alleged lack of written description support

Claims 1-31 stand rejected under 35 U.S.C. § 112, first paragraph for alleged lack of written description support of the claims by the specification. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The essence of the Examiner's rejection is that the specification fails to adequately describe structural features of the nucleic acid component of the conjugate recited claims that provides for binding to a blood clotting protein, and also fails to describe the structural features of the protein

component that provide for a half-life in blood of greater than 1.0 hours.

As to the latter, the claims have presently been amended to recite a protein component that is streptavidin or a variant thereof that retains biotin binding activity. Applicants submit that the specification clearly describes such a protein component and that the state of the art at the time the invention was made was such that the skilled artisan could readily obtain such a protein component. The Examiner is referred to the description at page 7, lines 11-22, and the references cited there and incorporated into the present application by reference, in this regard.

As to the nucleic acid component, certain of the present claims (28, 29, 38) recite a specific nucleotide sequence as a portion of the nucleic acid. Such claims should clearly be found well-described by the specification.

Other claims describe the nucleic acid in a "product-by-process" fashion. The Examiner should note first that it is perfectly acceptable to describe and claim a product in terms of the method for making it when the product is not easily susceptible to otherwise describing its structure. *In re Bridgeford,* 149 USPQ 55 (CCPA 1966). It is apparently the Examiner's position that the nucleic acid component of the

present invention is not susceptible to generic sructural description and so such an approach should be found acceptable.

Other claims describe the nucleic acid in terms of including a structural feature correlated with the function of binding to thrombin. Claim 37 recites that the nucleotide component includes a sequence that forms a "guanine quartet". This structure was known in the art at the time the present application was filed to correlate with binding to thrombin. *See*, Tasset et al., reference 29 of the present application.

Finally, many claims recite the nucleic acid component in terms of its function of binding to thrombin. A claim describing an invention in functional terms is not invalid as a matter of law merely because an element of the invention is described in functional terms if the skilled artisan can correlate some structure with that function. *See, Moba B.V. v. Diamond Automation, Inc.*, 66 USPQ2d 1429 (Fed. Cir. 2003). Such a structure-function correlation was known in the art at the time the invention was made, as evidenced by Tasset et al. (ref. 29 of the instant application) and also by Bock et al. (ref. 5 of the instant application). Though not presently recited in the claims, a hairpin structure formed by Watson-Crick base pairing is another structure that provides thrombin binding activity to a polynucleotide, especially RNA polynucleotides.

See, M.F. Kubik et al. *Nucl. Acids Res.* 22:2619-2626 (1994), of record.

Furthermore, the present specification well-describes a selection process, and starting points for implementing it, that allows the artisan of ordinary skill to easily select a nucleotide sequence that specifically binds to thrombin.

For all of the above reasons, Applicants submit that the present claims are well-supported by the specification and submit that the instant rejection should be withdrawn.

Conclusion

Applicants submit that the present application well describes and claims patentable subject matter. The favorable action of withdrawal of the standing rejections and allowance of the application is respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mark J. Nuell (Reg. No. 36,623) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application. The required fee of $55.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____
Mark J. Nuell, #36,623

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

DRN/mua
4045-0109P